BRUSH WELLMAN, INC. BERYLLIUM/MINING DIVISION

Topaz Mine

E/023/084

1994 ANNUAL REPORT of Mining Operations

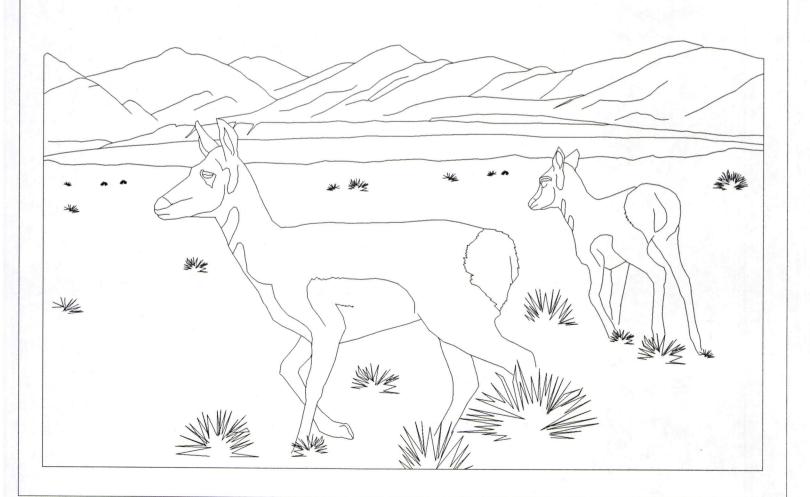


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¹Pen drilling was conducted under a BLM Notice of Operations and was subsequently assigned the DOGM designated file E/023/084. It is not part of the approved mine reclamation plan.

II.

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

355 West North Temple 3 Triad Center, Suite 350 Salt Lake City, Utah 84180-1203 Telephone: (801) 538-5340 Fax: (801) 359-3940



ANNUAL REPORT OF MINING OPERATIONS

The informational requirements of this form are based on provisions of the Mined Land Reclamation Act, Title 40-8, Utah Code Annotated 1953, as amended, and the General Rules as promulgated under the Utah Minerals Regulatory Program. An operator conducting mining operations under a Notice of Intention must file an annual operations and progress report (FORM MR-AR) with the Division.

I. GENERAL INFORMATION

1. 2. 3. 4. 5.	Report Time Period: From (mo./yr.) Jan. 1994 To (mo./yr.) Dec. 1994 DOGM File Number: M/023/003 Mine Name: Topaz Mining Property Mineral(s) Mined: (or permitted to mine): Bertrandite (beryllium) Legal Description (Location of Lands Affected): See enclosed description1/4, _1/4, Section _, Township _, Range1/4, _1/4, Section _, Township _, Range1/4, _1/4, Section _, Township _, Range _					
6.	Name of Operator or Company: Brush Wellman, Inc.					
7.	Permanent Address: P.O. Box 815 City, State, Zip: Delta, Utah, 84624 Phone: (801) 864-2701					
8.	Company Representative (or designated operator): Name: Greg G. Hawkins Title: Mine Manager Business Address: City, State, Zip: Phone: Delta, Utah 84624 (801) 864-2701 ext. 211					
	Please check if any of the above information has changed since previous year.					
	MINING AND RECLAMATION					
1.	Was the mine active during the past year? Yes ⊠ No □					
2.	If active, how much ore or mineral was mined? 94,835 Wet tons (delivered)					

- 3. How much additional acreage was affected during past year? No new acreage disturbed.
- 4. Briefly describe any new or additional surface disturbances that occurred during the past year. This description should include the type of work performed, and volume of material moved.

-NA- All areas were previously disturbed

- 5. How much acreage was reclaimed during past year? Approx. 1 acre reworked
- 6. Briefly describe the reclamation work performed during the past year. This description should include methods employed, and an evaluation of the results.

Testing and monitoring seed mix, germination rates, and fetilization of test plots. See "1994 FOLLOW-UP STORY" by Joe Hardy. Applied straw, manure, fertilizer and seed mix to some previously reclaimed areas. Constructed "waterbars" as suggested by DOGM and BLM representatives during the 1994 inspection .See letter dated October 6, 1994 and report by Tom Millwee.

- 7. What is the total disturbed acreage at years end? (252.74 Acres) Same as in 1992
- 8. Briefly summarize mining and/or reclamation plans for the upcoming year.

Work is planned to continue testing and monitoring of test plots as in 1994. Holistic reclamation techniques will be evaluated and considered for future testing Inspection of previously reclaimed areas will requested.

NOTE: Section III., "Additional Information" applies only to large mining operations.

III. <u>ADDITIONAL INFORMATION</u>

SEE ATTACHMENTS

- 1. An updated surface facilities map should be attached if there have been significant changes since the previous map was submitted.
- 2. Any monitoring results or other reports that are required under the terms of the approved notice of intention should be attached.

IV. SIGNATURE REQUIREMENT

I hereby certify that the foregoing is true and correct.

Name (Typed or Print): Greg G. Hawkins

Title of Operator: Mine

Signature of Operator:

Mine Manager

Date: 1/30/95

jb

TOPAZ MINING PROPERTY

LEGAL DESCRIPTION OF LANDS AFFECTED

Township 13 South, Range 12 West, SLM

Section 4

The SW 1/4 of the SE 1/4, and the SE 1/4 and the SW 1/4 of the SW 1/4.

Section 5

Lot 1 and Lot 2 and the SE ¼ and the SW ¼ of the NE ¼, and All ¼'s of the SE ¼, and the NE ¼ and the SE ¼ and the NW ¼ of the SW ¼, and Lot 3 and the SE ¼ of the NW ¼.

Section 6

Unaffected

Section 7

All 1/4's of the SE 1/4, and the NE 1/4 and the SE 1/4 of the SW 1/4.

Section 8

All of the NE $\frac{1}{4}$, and All $\frac{1}{4}$'s of the SE $\frac{1}{4}$, and the NE $\frac{1}{4}$ and the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$, and the SE $\frac{1}{4}$ of the NW $\frac{1}{4}$.

Section 9

All 1/4's of 1/4's (entire section affected)

Section 10

The NW 1/4 of the SW 1/4, and the SW 1/4 and the NW 1/4 of the NW 1/4.

Section 16 (State School Section Lease)

The NE 1/4 and the NW 1/4 of the NE 1/4, and the NW 1/4 of the NW 1/4.

Section 17

The NE ¼ and the NW ¼ of the NE ¼.

Township 12 South, Range 12 West, SLM

Section 32 (State School Section Lease)

The SW $\frac{1}{4}$ of the NE $\frac{1}{4}$, and the SE $\frac{1}{4}$ and the SW $\frac{1}{4}$ and the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$, and the NE $\frac{1}{4}$ and the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$.

To: Don McMillian Greg Hawkins Phil Sabey

From: Joe Hardy

Subject: Revegatation Plot Studies

1994 FOLLOW-UP STORY

In the late fall of 1993 some test plots were set up at the Brush Wellman mine site. It was the desire of this study that a more adaptable species of plant. This plant species of plant would then be added to our seed mix in the future, to aid in the results of our reclamation work. The two species of plants that were experimented with were: Atriplex corriguta a low growing, mat type species of saltbush that is extremely tolerant to high amounts of salinity and very low resistance and Kosha prostata a good all around forage plant that has had very high success in past revegatation studies throughout the inter-mountain area. This plant is also known for its ability live on very low amounts of moisture.

Four test plots were set up on different parts of the past revegatation areas. So the studies were performed in areas that had at one time or another been disturbed by mining.

The follow-up portion of these test plots from the fall of 1993 were performed on September 1 1994. Each test plot was visited and a study performed. Much to our dismay, each of these areas were a complete failure. None of the four test plots were successful in producing any of the desired species of plants, that were planted from the preceding fall.

There are a few reasons that these test plots could have failed so miserably. The one thing we are certain of is, that it was not due to bad seed germination. Some studies were done a month prior to the test plots. These studies were performed with petri-dishes, moist tissue and seed. The results from these tests showed a germination rate of 90% or better on each test.

The problem could have been a result of large amounts of salinity in the soil, but both species of plants that were studied, Atriplex corriguta and Kosha prostata are known to do well in high salinity situations.

Page 1 of 2

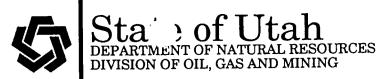
Talking with the people that are at the mine day in and day out, they felt that the long dry spring and hot dry summer were probably the culprits for the failure of the seed to present itself.

It is felt that the spring dryness was probably the biggest factor for the poor results of this study. In digging around in the plots the seed looked to not even have germinated. It is felt that if we tried again this year we might have better results, if mother nature will cooperate with us. We will also keep an eye on these test plots to see if the seeds might germinate this coming spring.

The Bureau of Land Management office in Fillmore was contacted and asked their feelings on the matter. They agreed that it was the lack of available moisture at the time that the fledgling seeds needed it to germinate.

If their are any questions on the matter of the complete results of our study get a hold of me.

Sincerely, Joe Hardy



Michael O. Leavitt Governor Ted Stewart Executive Director James W. Carter Division Director 355 West North Temple 3 Triad Center, Suite 350 Salt Lake City, Utah 84180-1203 801-538-5340 801-359-3940 (Fax) 801-538-5319 (TDD)

October 6, 1994

Greg Hawkins Mine Manager Brush Wellman, Inc. P.O. Box 815 Delta, Utah 84624

Re: Mine Plan Reclamation Variance and Release Requests, Brush Wellman Inc.,

Topaz Mining Property, M/23/003, Juab County, Utah

Dear Mr. Hawkins:

This letter is sent in response to your January 28, 1994 and July 29, 1994 letters, which seek formal Division approval of specific mine plan reclamation variance and revegetation release requests. The Division conducted a field inspection of the mine properties on September 8, 1994. We evaluated the results of the second reseeding efforts on the upper Rainbow and North Blue Chalk dumps during the inspection. As stipulated in the Division's September 10, 1992 letter, a variance is hereby granted for the upper portions of the Rainbow and North Blue Chalk dumps.

Your letters also request a release for reclamation work performed within the Sigma Emma and Taurus areas. Specifically, a release has been requested for the safety berm construction and road reclamation in these areas. We observed these berms and road conditions during our inspection and hereby grant a release for the safety berm construction surrounding the Sigma Emma and Taurus pits. However, due to lack of adequate revegetation, a release cannot be granted at this time for the roads in both areas. Due to erosion on the road, the Division recommends the construction of several waterbars along the portion of road east of the Sigma Emma pit. We have enclosed some references that could be used to assist you in designing and spacing water bars. Scarifying compacted areas and reseeding of both roads may help facilitate future revegetation success.

During the September 8th inspection, you expressed a *verbal* request for release of the safety berm construction at the Roadside #3, Section 16 North #1 pits and the Roadside #1 & #2 backfill area. A release for the safety berm construction for these areas is granted. As indicated in Brush Wellman's 1992 Annual Report of

Page 2 Greg Hawkins M/023/003 October 6, 1994

Mining Operations, the Roadside #1 & #2 backfill area was seeded in 1992. The Division will not consider releasing this area until the vegetation has survived at least three growing seasons.

You pointed out during our inspection, the voluntary, supplemental reclamation work performed by Brush Wellman on the north Roadside #1 & #2 dumps. The Division commends the company for "going the extra mile" and reworking this area, especially when there was no apparent regulatory requirement to do so. We thank you for your continued cooperation and patience in resolving these permitting issues. If you have any further questions in this regard, please contact me or Travis Jones at your convenience.

Sincerely,

For D. Wayne Hedberg

Permit Supervisor

Minerals Regulatory Program

jb

cc: Rody Cox, BLM

Lowell Braxton, DOGM

M023003.var

BRUSH WELLMAN INC. ENGINEERED MATERIALS TOPAZ MINE

DATE: January 20, 1995

TO: Greg Hawkins

FROM: Tom Millwee and Clyde Yates

SUBJECT: Reclamation work

Reclamation work for the 1994 year has been completed.

The materials that were used consisted of approximately 500 lbs. of gypsum, 90 (ninety) tons of top soil (which consisted of sixty percent top soil and forty percent horse manure), sixteen bales of straw and 90 (ninety) lbs. of seed.

The seed mix that was used consisted of a seed mixture as follows:

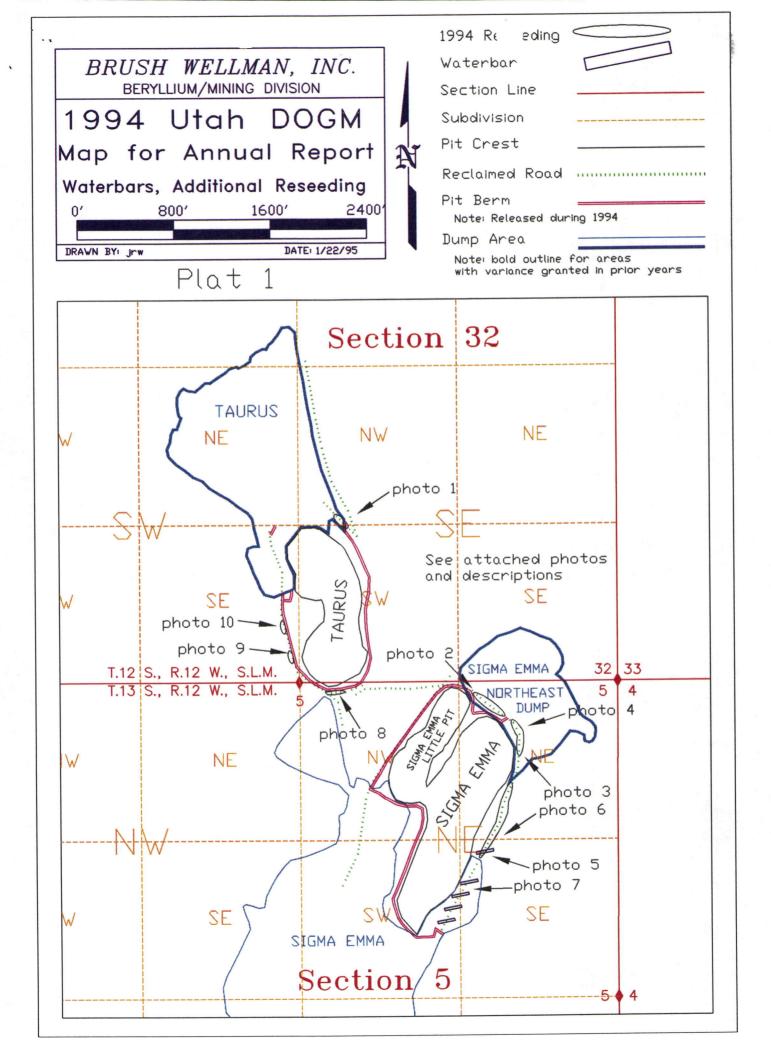
- 1. Indian ricegrass @19.75%
- 2. Shadscale Saltbush @18.83%
- 3. Fourwing Saltbush @18.76%
- 4. Yellow Blossom Sweet clover @9.92%
- 5. Rubber Rabbitbrush @5.40%

Please note Plat 1:

Five water bars were constructed out of straw by digging down six inches, then placing straw in the trench and back-filling with dirt as shown on accompanying photos, running along the east reclaimed road near Sigma Emma pit.

Reclamation work also has been completed on the Taurus and Sigma Emma areas as shown on plat and in the photos.

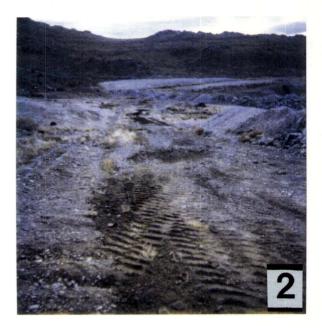
/cn cc:J. Wagner Annual report







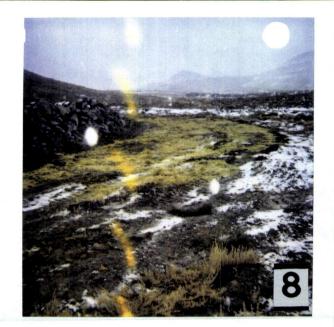
















Descriptions of Photographs

The photographs were taken to show the extent of work as completed during the 1994 reclamation efforts. The following is intended to describe the photo location, orientation, area affected and work done.

- Photo 1 Picture of the SE corner of the Taurus dump, looking northwesterly. This area is estimated at 0.10 acres. It was treated with topsoil, gypsum and seed mix.
- Photo 2 Picture of the reclaimed road north of the Sigma Emma pit, looking southeasterly. This area is estimated at 0.15 acres. It was treated with topsoil, gypsum and seed mix.
- Photo 3 Picture of the reclaimed road east of the Sigma Emma pit, looking northerly. This area is estimated at 0.20 acres. It was treated with topsoil, gypsum, straw and seed mix.
- Photo 4 Picture of the reclaimed road northeast of the Sigma Emma pit, looking southeasterly. This area is the same as in Photo 3, except viewed from the other end.
- Photo 5 Picture of the northernmost waterbar and the reclaimed road east of the Sigma Emma pit, looking northeasterly. This area is estimated at 0.35 acres. It was treated with topsoil, gypsum, straw and seed mix.
- Photo 6 Picture of the series of waterbars on the reclaimed road east of the Sigma Emma pit, looking southwesterly. Acreage is not estimated for this work. The waterbars will divert drainage away from the road and into the pit confines.
- Photo 7 Picture of waterbars and road berm on reclaimed road east of the Sigma Emma pit, looking southwesterly. This is the same area as Photo 6, except viewed from farther down line.
- Photo 8 Picture of the reclaimed road south of the Taurus pit, looking easterly. This area is estimated at 0.10 acres. It was treated with topsoil, gypsum, straw and seed mix.
- Photo 9 Picture of the reclaimed road east of the Taurus pit, looking southerly. This area is estimated at 0.05 acres. It was treated with topsoil, gypsum, straw and seed mix.
- Photo 10 Picture of the reclaimed road east of the Taurus pit, looking northerly. This area is estimated at 0.05 acres. It was treated with topsoil, gypsum, straw and seed mix.

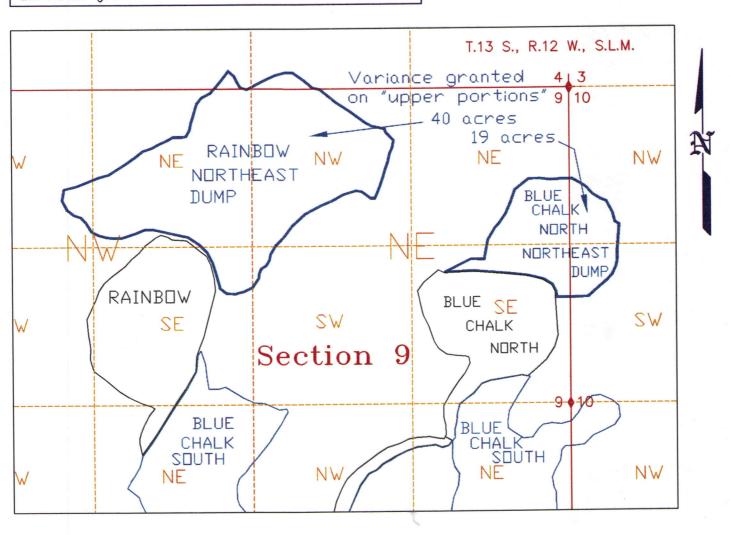
BRUSH WELLMAN, INC. BERYLLIUM/MINING DIVISION 1994 Utah DOGM Map for Annual Report Areas Granted Variance 0' 800' 1600' 2400' DRAWN BY: Jirw DATE: 1/22/95

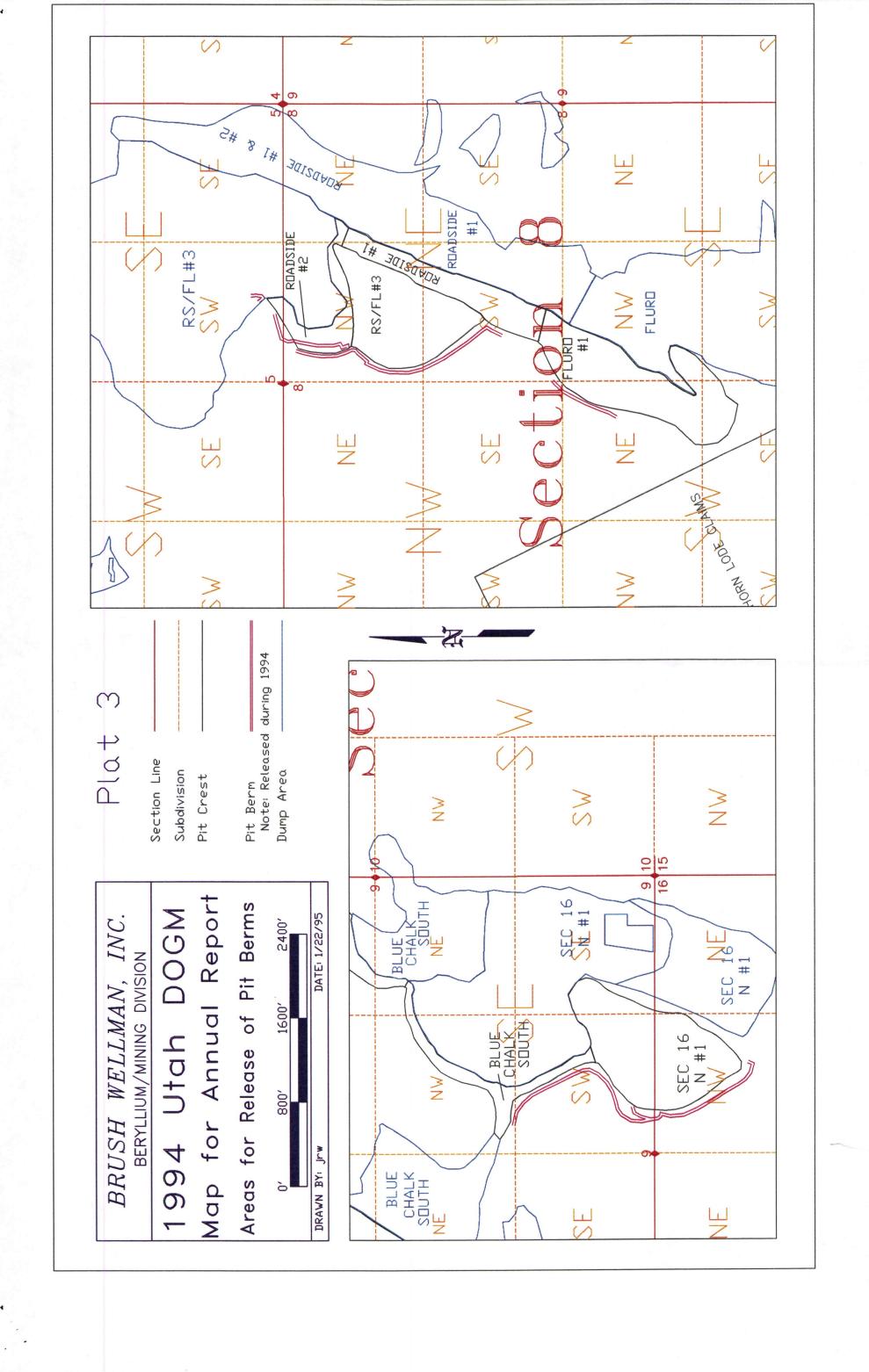
Plat 2

Section Line
Subdivision
Pit Crest

Dump Area

Note: bold outline for areas with variance granted in 1994





Effective Moisture for Topaz Mt.

Measured Rainfall

•						Ξ.	Measuleu nailliai	בוקר. בוקר.	<u></u>								
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
October		<u> </u>	2.20			1.21	0.55				0.94	0.49	1.00		0.33	2.15	3.41
November		2.53						1.21		0.71		0.38	1.43	09.0	1.21		
December				0.55	2.53											1.16	0.66
January		0.66	1.70						0.77			0.33		0.55			
February	-	0.61		1.10	3.36	3.30			0.44	1.60	2.31		0.38		0.99		0.06
March			1.90					1.10		0.72	0.50	0.82	0.38	1.15	0.71	2.26	0.66
April	1.50	1.76	1.98		0.55	1.65	4.46		2.86	0.22	09:0	0.00	1.43	96.0	0		0.94
May	99.0	0.22		2.75	0.55	1.10		0.99		1.38	1.10	0.99	1.37	0.71	0.49		1.16
June		0.39	2.26	1.32	1.72	1.32	1.93			0.28	0.39		,			2.37	
July					1.38							0.77				0.55	
August						3.08	3.41				0.39	0.93	09:0				
September	0.28			2.20	4.24		0.50			1.70	0.55	0.22	0.94	2.75	1.4	0	
Total	2.44	6.17	10.04	7.92	14.33	11.66	10.85	3.30	4.07	6.61	6.78	4.93	7.53	6.72	5.13	8.49	6.89
Yrly Avg.	0.81	1.03	2.01	1.58	2.05	1.94	2.17	1.10	1.36	0.94	0.85	0.55	0.94	1.12	0.73	1.42	1.15
Minimum	0.28	0.22	1.70	0.55	0.55	1.10	0.50	0.99	0.44	0.22	0.39	0.00	0.38	0.55	00.0	00.0	0.00
Maximum	1.50	2.53	2.26	2.75	4.24	3.30	4.46	1.21	2.86	1.70	2.31	0.99	1.43	2.75	1.40	2.37	3.47

Note: All measurements are in inches. The Calendar rain year begins October and ends in September. 1994 rain can was recharged on October 19, 1993. The last reading was taken on October 5, 1994.

EFFECTIVE MOISTURE TOPAZ MT.

1994

25

20

Nov/Dec

Jan/Feb

March

April

May

Jun/Jul/Aug/Sep/Oct

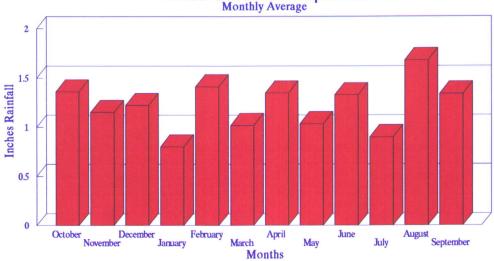
MONTHS

RAINFALL/READING

INTERVALS *

Effective Moisture Topaz Mt. Yearly Rainfall

Effective Moisture Topaz Mt. Monthly Average





ENGINEERED MATERIALS

Brush Wellman Inc. P.O. Box 815 Delta, Utah 84624 Phone 801/864-2701

Rex Rowley Area Manager Bureau of Land Management House Range Resource Area 15 East 500 North P.O. Box 778 Fillmore, Utah 84631



Request for closure of BLM case file UTU-070713

Dear Mr. Rowley

The "Pen 31 exploration project" has been completed. The drilling was done as planned after your archaeologist inspected the site. Please note that no water or other unexpected geologic conditions were encountered. No additional work was conducted beyond that outlined in the notice.

The two bore holes had the cuttings returned and tamped. The holes were then plugged with cement from ground level to a depth of five feet. One "old" bore hole in the vicinity was plugged in conjunction with this work. The origin of this hole is unknown. It was plugged to conform to the Hole Plugging Requirement as provided by your office.

The area surrounding the drilling activity was reseeded and raked as a matter of standard procedure. The seed mix used consists of Indian Ricegrass, Shadscale Saltbush, Fourwing Saltbush, Yellow Blossom Sweet Clover, and Rubber Rabbitbrush. The raking was intended to loosen the traffic areas and lodge the broadcasted seed.

All refuse, survey markers, etc. observed at the work site were removed. The work and reclamation effort was done with compliance to the "Conditions of Acceptance..." in mind. Please proceed with your inspection of the site and close the case file. It is my understanding that as "Lead Agency" you will notify the Utah Division of Oil, Gas and Mining along with the Utah Department of Environmental Quality, Division of Water Quality of the completion of this project.

If you have any questions or need further information to close this case file (UTU-707013), please contact me at (801) 864-2701.

Thank You

John R. Wagner Mine Planning

cc:

Greg Hawkins Crandall Nielson



Uni 1 States Department of th nterior

BUREAU OF LAND MANAGEMENT HOUSE RANGE RESOURCE AREA

15 East 500 North P.O. Box 778 Fillmore, Utah 84631



3800 (U-054) UTU-070713

October 20, 1994

CERTIFIED MAIL #P 837 809 797 Return Receipt Requested

GREG HAWKINS
MINE MANAGER
BRUSH WELLMAN INC
PO BOX 815
DELTA UT 84624

Dear Mr. Hawkins:

On September 22, 1994, a surface compliance field inspection was conducted at the site referenced by your exploration notice UTU-070713, located in the N2, Section 19, T. 12 S., R. 12 W., SLM. This notice was accepted by our office on October 1, 1993, under the 43 CFR 3809 regulations for surface management.

On July 27, 1994, we received a letter from Brush Wellman requesting closure of case file UTU-070713. Based on our inspection, revegetation of the area disturbed during drilling is inadequate for release. We are leaving this case file open for another growing season and suggest that revegetative efforts could be enhanced by "raking out" or removing some of the left over drill cuttings and seeding in the late fall, before the ground freezes and is seasonally covered with snow.

We appreciate the company voluntarily performing supplemental reclamation by plugging an old drill hole. Please thank John Wagner for being available when Rody Cox, of my staff, inspected this area. If you have any questions regarding this letter, please feel free to contact Rody Cox at (801) 743-6811.

Sincerely,

Rex Rowley Area Manager

perator Bru	sh Wellman,	Inc. FROM_	Date Janu	ary 31, 1995
MULT	ENTIALBONE IPUL DOCUMENT MENT _OTHER	TRACKING SH	IEETNEW	
Description			YEA	R-Record Number
NOI	<u>X</u> Incoming	_Outgoing	Internal	Superceded
199	4 Annua	I Repor-	1	
NOI	Incoming	Outgoing	Internal	Superceded
NOI	Incoming	Outgoing	Internal	Superceded
NOI	Incoming	Outgoing	Internal	Superceded
	1/2 X 11 MAP P.			LARGE MAP

This page is a reference page used to track documents internally for the Division of Oil, Gas and